

**REMARKS**

Claims 1-19 are pending. Claims 20-21 are cancelled without prejudice. Claims 1-21 are rejected under 35 U.S.C. § 103(a).

Independent claims 1, 9, 13, and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants' admitted prior art (AAPA) in view of Tröster et al., An Interpolative Bandpass Converter on a 1.2- $\mu$ m BiCMOS Analog/Digital Array, VOL. 28, NO. 4, 471-477 (April 1993). Claim 1 is to recites "An RF receiver apparatus, comprising: **mixing circuitry formed on a first integrated circuit for mixing an analog RF signal down to an analog IF signal; an analog IF-to-digital baseband converter formed on said first integrated circuit and coupled to said mixer for converting said analog IF signal into a digital baseband signal; and an output coupled to said analog IF-to-digital baseband converter for transmitting said digital baseband signal.**" (emphasis added).

Examiner admits AAPA does not disclose "mixing circuitry" and "an analog IF-to-digital baseband converter circuitry" formed on "a first integrated circuit" as required by claim 1. Examiner cites Tröster et al. for these limitations. Applicants respectfully disagree. Tröster et al. disclose a circuit that is, at most, equivalent to baseband processor 13 of Figure 1 of AAPA. Note that the baseband processor 13 receives a digital IF signal 19 and produces a digital baseband signal 18. (page 2, lines 3-7). Likewise, Tröster et al. state "Now the monolithic integration of the complete signal path from the IF signal range to the digital baseband processing is feasible." (Conclusion). Furthermore, Tröster et al. disclose in their Floorplan diagram of Figure 6 intermediate frequency input signal  $X_{IF}(t)$  and baseband output signals  $I_{kl}$  and  $Q_{kl}$ . Tröster et al. fail to teach or suggest "mixing circuitry formed on a first integrated circuit for mixing an analog RF signal down to an analog IF signal" as required by claim 1.

Examiner's reference to "mixed signal circuit components" at (Office Action 6/28/05, page 4) is a reference to combined analog and digital circuitry. It is unrelated to "mixing circuitry

formed on a first integrated circuit for mixing an analog RF signal down to an analog IF signal” as required by claim 1. Thus, applicants respectfully submit that Tröster et al. only disclose what is already AAPA. Furthermore, AAPA combined with the disclosure of Tröster et al. fails to teach or suggest the foregoing emphasized limitations of claim 1. Thus, claim 1 and depending claims 2-6 are patentable under 35 U.S.C. § 103(a).

Independent claim 9 recites “A baseband processor apparatus, comprising: **an input for receiving a digital baseband signal from an RF receiver apparatus, said RF receiver apparatus comprising mixing circuitry formed on a first integrated circuit for mixing an analog RF signal down to an analog IF signal and an analog IF-to-digital baseband converter formed on the first integrated circuit and coupled to receive said analog IF signal; and a digital communication processing portion coupled to said input for performing a digital processing operation on said digital baseband signal.**” (emphasis added). As previously discussed with regard to claim 1, no combination of AAPA and the disclosure of Tröster et al. teach or suggest the emphasized limitations of claim 9. There is simply no disclosure that “an RF receiver apparatus . . . comprising mixing circuitry formed on a first integrated circuit for mixing an analog RF signal down to an analog IF signal” might be combined with “an analog IF-to-digital baseband converter formed on the first integrated circuit and coupled to receive said analog IF signal” as required by claim 9. Thus, claims 9-11 are patentable under 35 U.S.C. § 103(a).

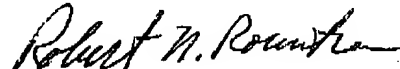
Independent claim 13 recites “A communication receiver, comprising: **an RF receiver apparatus including mixing circuitry for mixing an analog RF signal down to an analog IF signal, an analog IF-to-digital baseband converter coupled to said mixer for converting said analog IF signal into a digital baseband signal, and an output coupled to said analog IF-to-digital baseband converter for outputting said digital baseband signal, said RF receiver apparatus formed on a first integrated circuit; and a baseband processor apparatus having an input coupled to said output of said RF receiver apparatus for receiving said digital baseband signal from said RF receiver apparatus, and a digital communication processor coupled to said**

input for performing a digital processing operation on said digital baseband signal." (emphasis added). Independent claim 13 recites an RF receiver including mixing circuitry and an analog-to-digital baseband converter formed on a first integrated circuit. As previously discussed, no combination of AAPA and Tröster et al. teach or suggest the foregoing emphasized limitations of claim 13. Thus, claims 13-16 are patentable under 35 U.S.C. § 103(a).

Independent claim 18 recites "A method of using an **RF receiver apparatus formed on an integrated circuit**, comprising: **mixing an analog RF signal down to an analog IF signal within the RF receiver apparatus; converting the analog IF signal into a digital baseband signal within the RF receiver apparatus; and transmitting the digital baseband signal.**" (emphasis added). As previously discussed, no combination of AAPA and Tröster et al. teach or suggest mixing an analog RF signal down to an analog IF signal and converting the analog IF signal to a digital baseband signal on an integrated circuit. Thus, claims 18-19 are patentable under 35 U.S.C. § 103(a).

In view of the foregoing, applicants respectfully request reconsideration and allowance of claims 1-19. If the Examiner finds any issue that is unresolved, please call applicants' attorney by dialing the telephone number printed below.

Respectfully submitted,



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